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METHOD OF IMPROVING THE LUBRICATING PROPERTIES OF MINERAL OIL

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by

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13. ABSTRACT

The method of improving the lubricating properties of mineral oil for internal combustion engines by the simultaneous addition into the lubrication system of iodine and a solid inhibitor in the form of an alloy (for example, sodium with tin), placing them in filter-stabilizer cassettes, is distinguished by the fact that for the purpose of improving the formation of protective film, iodine is added in crystalline form and dissolved directly in the oil which circulates in the lubrication system of the engine.

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By: V. P. Babichev, P. Ye. Nechayev et al.

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METHOD OF IMPROVING THE LUBRICATING PROPERTIES OF MINERAL OIL

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The method is intended for use principally in internal combustion engines.

Methods exist for improving the lubricating properties of mineral oil by the simultaneous addition into the lubrication system of an internal combustion engine of iodine and a solid inhibitor (for example, a sodium-tin alloy) and by placement of the components in the cassettes of the filter-stabilizer. Here, the iodine is first mixed in an organic solvent, for instance in benzene, and hygroscopic material is saturated with this solution.

Drawbacks of existing methods include their flammability and the great consumption of iodine and the solvent. Moreover, for accomplishment it requires a ventilated room in which to dissolve the iodine.

The purpose of the invention is the formation of a protective organometallic film on the working surfaces of parts.

For this, iodine is dissolved directly into the lubrication system of the engine and iodine together with an inhibitor is added to the lubricant.

The proposed method differs from the existing ones by the fact that iodine is added in crystalline form and is dissolved directly in the oil circulating in the engine lubrication system. In addition to this the iodine crystals are charged into a little gauze bag and then it is sealed up in a mesh package and placed into the filter-stabilizer cassette.

Tests show that crystalline iodine added in the amount of 0.03-0.05% of the weight of the oil completely dissolves in it at a temperature of 30-60°C, uniformly disperses throughout the entire lubrication system, and together with the inhibitor forms a protective organometallic film in the form of a bright coating.

A comparison of the sizes of the parts before the beginning of the experiment and over 2500 h of engine operation showed that the clearances in the bearings did not vary.

Object of the Invention

The method of improving the lubricating properties of mineral oil for internal combustion engines by the simultaneous addition into the lubrication system of iodine and a solid inhibitor in the form of an alloy (for example, sodium with tin), placing them in filter-stabilizer cassettes, *is distinguished* by the fact that for the purpose of improving the formation of a protective film, iodine is added in crystalline form and dissolved directly in the oil which circulates in the lubrication system of the engine.